

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Paragraph starting on page 4, line 29 through page 5, line 7:

Preferably, in this latter embodiment, a first stage having the highest vacuum speed V1 is located under the dispersion chamber in the primary section of the vacuum zone extending up to a distance d -- preferably from 5 to 20 mm, for example 10 mm -- perpendicular to the lower edge of the wall downstream from the dispersion chamber and at least one second stage, developing a vacuum speed V2 slower than V1, extends downstream from the first stage over a secondary section of the vacuum zone. Thus, in this particular configuration, the vacuum speed is not uniform over the whole length of the vacuum chamber; the vacuum speed is the fastest in the primary section, located upstream from the vacuum zone, which corresponds to the first vacuum stage, while it is lower in the secondary section of the vacuum zone that extends beyond the first stage, specifically over the distance d.

After the paragraph on page 5, lines 13-16, PLEASE INSERT THE FOLLOWING TWO PARAGRAPHS:

In one embodiment, in the secondary section, the machine has a compressive roller, preferably porous or perforated, placed transversely above the surface conveying the non-woven

material that can be applied to the web of fibers beyond the downstream wall of the dispersion chamber.

Preferably, the compressive roller is placed perpendicular to a partition separating two second stages in the secondary section.

Paragraph starting on page 6, line 28 through page 7, line 2:

Under the upper end 1a, there is a vacuum tank which ~~can~~, ~~potentially with other means, produce~~ is capable of producing an air flow 7 inside the dispersion chamber 2 symbolized by arrows that makes it possible to disperse the fibers (not shown) inside said chamber 2 and project them onto the upper end 1a. The cylinder 8, called the dispersing cylinder, supplies the dispersion chamber 2 with fibers. Potentially, an injection of air through the upper opening in the dispersion chamber may help disperse the fibers.

Paragraph on page 8, lines 17-18:

The operation of the machine in this invention will now be described more specifically in relation to the ~~second~~ example illustrated by Figures 2 and 5.

Paragraph on page 8, lines 20-23:

~~For the sake of simplification, in~~ In Figure 5, the vacuum tank 6 has ~~only~~ three stages, namely the first stage 10, which corresponds to the primary section 9c of the vacuum zone 9, and

two successive second stages 14 and 15, which correspond to subsections 9d₁ and 9d₂ of the secondary section 9d of the vacuum zone 9. This number of stages is not exclusive, and can be higher, as in the example shown in Figure 2, but it may also be two.

Paragraph starting on page 8, line 25 through page 9, line 5:

The fibers that are fed to the interior of the dispersion chamber 2, on the periphery of the dispersing cylinder 8 are detached from the fittings 8a of this cylinder by the action of the air flow produced inside the dispersion chamber 11 and potentially by other means. The fibers are ejected individually inside the dispersion chamber 2, are dispersed by the air flow over the whole horizontal section of said chamber 2 and are projected over the upper end 1a of the conveyor belt 1. Due to the accumulation of fibers on the upper end 1a when the conveyor belt 1 moves, a non-woven material 13 is formed that is taken to the outside of the dispersion chamber 2, passing at right angles to the wall 4 downstream from said chamber 2, which in the example illustrated is a plate. The spacing between the lower edge 12 of said downstream wall 4 and the upper end 1a is set so that it is greater than the thickness of the non-woven material formed in the dispersion chamber 2, which is where it is when it comes out of said chamber 2. This space e is a function of the grams per square meter of the non-woven material. It is preferably from 20 to 40 mm, for example 30 mm.

Paragraph on page 9, lines 19-30:

Beyond that, the non-woven material is taken over in some way by the second stage 14 of the vacuum tank 6 in which the vacuum speed V2 is lower than the speed V1 of the first stage. This takeover occurs when the non-woven material 13 is still inside the dispersion chamber 2 over the distance d, right when the non-woven material 13 has come out of the dispersion chamber 2. This takeover, which continues in the second stage 14 of the vacuum tank 6, does not allow any disturbances caused by the non-woven material passing under the lower edge 12 of the downstream rise 4 of the dispersion chamber 2, since approximately the same system is observed for the air flow on both sides of this downstream rise 4. Due to the vacuum produced beyond the dispersion chamber under the upper end 1a, no parasitic air flows are seen entering into the vacuum chamber in the space left free between the non-woven material 13 and the lower edge 12 of the downstream rise 4 or at least no lifting detrimental to the fibers is seen.

After the paragraph on page 9, lines 19-30, PLEASE INSERT THE FOLLOWING TWO PARAGRAPHS:

In the embodiment shown in Figure 5, there is a compressive roller 20 which is perpendicular to the partition 21 that separates the two successive stages 14, 15 of the secondary section 9a. This compressive roller 20 is mounted transversely above the upper end 1a of the conveyor belt 1, and is applied to the non-woven material 13. The distance T between the vertical going through the lower edge 12 of the downstream wall 4 and the

vertical tangent to the rear of the roller 20 is preferably relatively small, preferably from 10 to 30 mm.

In one preferred example of embodiment, the dispersion chamber 2 has a length L on the order of 60 mm, the length of the main section 9c is on the order of 50 mm and the length of the first stage 9d₁ of the secondary section is on the order of 80 mm. The distance T is on the order of 20 mm for a roller 20 having a diameter on the order of 100 mm.

Paragraph on page 10, lines 5-14:

When it comes out of subsection 9d₁, from secondary section 9d of the vacuum zone 9, the non-woven material is then taken over by the vacuum produced by the next second stage 15 of the vacuum tank 6, whose vacuum speed V3 is less than the vacuum speed V2 of the second stage 14. ~~This~~ Potentially, this takeover is may be done successively with the other second stages 16 to 18 until there is no longer any vacuum at all beyond the tank 6. This gradual reduction (in stages in this example) in the vacuum in the secondary zone 9d allows the fibers of the non-woven material 13 to relax gradually due to the effect of said vacuum. This is what makes it possible to obtain the results wanted, namely the production of a very homogeneous non-woven material under good industrial conditions at high speed.

Paragraph on page 11, lines 4-10:

However, this invention is not limited to the embodiments which have been described as non-exhaustive examples. In particular, it would be possible to have, transversely above the upper end 1a of the conveyor belt 1, some other compression rollers designed to accompany the movement of the fibers of the non-woven material, which compression rollers would be located advantageously at right angles to the interface between two successive subsections, or even at right angles to the interface between the primary section 9c and the secondary section 9d of the vacuum zone.